

WHAT IS CLAIMED IS:

1                   1.       In an object-oriented environment, a method of testing a software  
 2 program comprising a plurality of components, the method comprising:  
 3                   determining a cursor position;  
 4                   ascertaining an accessibility context associated with the cursor position;  
 5                   identifying a component by reference to the accessibility context;  
 6                   searching a component hierarchy for an object having an accessibility  
 7 context matching the component's accessibility context; and  
 8                   replaying an event by calling a program method defined by an  
 9 accessibility role for the object.

1                   2.       A method as recited in claim 1, wherein the accessibility context  
 2 has an accessibility role that defines a set of properties, including at least one program  
 3 method, associated with the accessibility context.

1                   3.       A method as recited in claim 2, wherein the identified  
 2 component comprises the set of properties, including the at least one program method,  
 3 defined by the accessibility role.

1                   4.       A method as recited in claim 2, wherein the object comprises the  
 2 set of properties, including the at least one program method, defined by the  
 3 accessibility role.

1                   5.       A method as recited in claim 1, wherein the cursor position is  
 2 determined in response to a trigger.

1                   6.       A method as recited in claim 5, wherein the trigger comprises the  
 2 execution of the program method a first time.

1                   7.       A method as recited in claim 6, wherein replaying an event  
 2 comprises executing the program method a second time.

1                   8.       A method as recited in claim 5, wherein the trigger comprises a  
 2 cursor entering a field.

- 1                   9.     A method as recited in claim 5, wherein the trigger comprises a  
2 cursor exiting a field.
- 1                   10.    A method as recited in claim 5, wherein the trigger comprises a  
2 user manipulating a mouse button.
- 1                   11.    A method as recited in claim 5, wherein the trigger comprises a  
2 user manipulating a hotkey on a keyboard.
- 1                   12.    A method as recited in claim 11, wherein the user manipulating a  
2 hotkey simulates execution of the program method, and wherein replaying an event  
3 comprises executing the program method a first time.
- 1                   13.    A method as recited in claim 1, further comprising creating a  
2 record of the identified component.
- 1                   14.    A method as recited in claim 13, further comprising manually  
2 modifying the record of the component.
- 1                   15.    A method as recited in claim 14, wherein manually modifying  
2 the record of the component comprises changing a property of the component.
- 1                   16.    A method as recited in claim 14, wherein manually modifying  
2 the record of the component comprises changing an accessibility role of the component.
- 1                   17.    A method as recited in claim 14, wherein manually modifying  
2 the record of the component comprises identifying a different program method to be  
3 executed in replaying an event.
- 1                   18.    A method as recited in claim 13, wherein the record is  
2 incorporated in a file.
- 1                   19.    A method as recited in claim 18, wherein the file is an XML file.
- 1                   20.    A method as recited in claim 1, wherein the component  
2 comprises a button.

1                   21.     A method as recited in claim 20, wherein the program method  
2 performs an action related to the selection of the button.

1                   22.     A method as recited in claim 1, wherein the component  
2 comprises a window.

1                   23.     A method as recited in claim 22, wherein the program method  
2 performs an action selected from the group consisting of opening the window, closing  
3 the window, resizing the window, and moving the window.

1                   24.     A method as recited in claim 1, wherein the component  
2 comprises a selectable component.

1                   25.     A method as recited in claim 24, wherein the program method  
2 performs an action selected from the group consisting of selecting the component and  
3 deselecting the component.

1                   26.     A method as recited in claim 1, wherein the component  
2 comprises a portion of text.

1                   27.     A method as recited in claim 26, wherein the program method  
2 performs an action selected from the group consisting of cutting the portion of text,  
3 copying the portion of text, pasting the portion of text and formatting the portion of  
4 text.

1                   28.     A method as recited in claim 1, further comprising, performing,  
2 for a plurality of iterations, the steps of determining a cursor position relative to a  
3 component, ascertaining an accessibility context, and identifying the component.

1                   29.     A method as recited in claim 28, further comprising creating a  
2 plurality of records, each of the plurality of records comprising a component identified  
3 in one of the plurality of iterations.

1                   30.     A method as recited in claim 29, further comprising, with respect  
2 to each of the plurality of records, searching a component hierarchy for an object  
3 having an accessibility context matching the identified component's accessibility

4 context and replaying an event by calling a program method defined by an accessibility  
5 role for the object.

1 31. A method as recited in claim 1, wherein replaying the event  
2 comprises displaying a result of the event on a display device.

1 32. A method as recited in claim 1, wherein replaying the event  
2 comprises writing a result of the event to a file.

1 33. A method as recited in claim 1, further comprising, after  
2 replaying the event, evaluating a result of the event.

1 34. A method as recited in claim 33, wherein evaluating a result of  
2 the event comprises comparing the result of the event with an anticipated result of the  
3 event.

1 35. A method as recited in claim 1, further comprising analyzing the  
2 event to determine whether the component complies with the Americans with  
3 Disabilities Act.

1 36. In an object-oriented environment, a method of testing a software  
2 program comprising a plurality of components, each component comprising an  
3 accessibility context capable of identifying the component within the software program,  
4 the method comprising:  
5 determining a cursor position;  
6 ascertaining an accessibility context associated with the cursor position,  
7 the accessibility context having an accessibility role that defines a set of properties,  
8 including at least one program method, associated with the accessibility context;  
9 identifying a component by reference to the accessibility context, the  
10 component comprising the set of properties, including the at least one program method,  
11 defined by the accessibility role;  
12 searching a component hierarchy for an object having an accessibility  
13 context matching the component's accessibility context, such that the object comprises  
14 the set of properties, including the at least one program method, defined by the  
15 accessibility role; and

16                   replaying an event by calling the program method defined by the  
17   accessibility role for the object.

1                   37.     A method as recited in claim 36, further comprising creating a  
2   record of the identified component, the record including the component's accessibility  
3   role.

1                   38.     A computer program product for testing a software program  
2   comprising a plurality of components, the computer program product being embodied  
3   in a computer readable medium and comprising instructions executable by a computer  
4   to:  
5                   determine a cursor position;  
6                   ascertain an accessibility context associated with the cursor position;  
7                   identify a component by reference to the accessibility context;  
8                   search a component hierarchy for an object having an accessibility  
9   context matching the component's accessibility context; and  
10                  replay an event by calling a program method defined by an accessibility  
11   role for the object.

1                   39.     A system for testing a software program comprising a plurality  
2   of components, the system comprising:  
3                   a processor;  
4                   an input device in communication with the processor; and  
5                   a computer readable medium in communication with the processor, the  
6   computer readable medium comprising instructions executable by the processor to:  
7                   determine a cursor position;  
8                   ascertain an accessibility context associated with the cursor  
9   position;  
10                  identify a component by reference to the accessibility context;  
11                  search a component hierarchy for an object having an  
12   accessibility context matching the component's accessibility context; and  
13                  replay an event by calling a program method defined by an  
14   accessibility role for the object.

1                   40.     A system as recited in claim 39, wherein the cursor position is  
2 determined in response to a trigger.

1                   41.     A system as recited in claim 40, wherein the input device is a  
2 mouse having at least one button, and wherein the trigger comprises manipulation of  
3 the button.

1                   42.     A system as recited in claim 40, wherein the input device is a  
2 keyboard having at least one hotkey, and wherein the trigger comprises manipulation of  
3 the hotkey.

1                   43.     A system as recited in claim 39, further comprising a display  
2 device in communication with the processor, wherein replaying the event comprises  
3 displaying the result of the event on the display device.

1                   44.     In an object-oriented environment, a data structure that can be  
2 used to test a software program comprising a plurality of components, each component  
3 comprising an accessibility context capable of identifying that component within the  
4 software program; the data structure comprising at least one record of a component, the  
5 at least one record comprising an accessibility role associated with an accessibility  
6 context for the component; the accessibility role defining a set of properties, including  
7 at least one program method, associated with the component, such that the record can  
8 be compared with an object in a component hierarchy to determine whether the object  
9 has an accessibility context matching the component's accessibility context, and, if the  
10 object's accessibility context matches the component's accessibility context, an event  
11 can be replayed by calling a program method associated with an accessibility role for  
12 the object.

1                   45.     A system for testing a software program comprising a plurality  
2 of components, the system comprising:  
3                   means for determining a cursor position;  
4                   means for ascertaining an accessibility context associated with the  
5 cursor position;  
6                   means for identifying a component by reference to the accessibility  
7 context;

8 means for searching a component hierarchy for an object having an  
9 accessibility context matching the component's accessibility context; and  
10 means for replaying an event by calling a program method defined by an  
11 accessibility role for the object.

1 46. In an object-oriented environment, a method of determining a  
2 software program's compliance with the Americans with Disabilities Act, the software  
3 program comprising a plurality of components, the method comprising:  
4 determining a cursor position;  
5 ascertaining an accessibility context associated with the cursor position;  
6 identifying a component by reference to the accessibility context;  
7 searching a component hierarchy for an object having an accessibility  
8 context matching the component's accessibility context; and  
9 analyzing the object to evaluate the component's compliance with the  
10 Americans with Disabilities Act.

1 47. A method as recited in claim 46, wherein analyzing the object  
2 comprises replaying an event by calling a program method defined by an accessibility  
3 role for the object.

1 48. A method as recited in claim 46, wherein analyzing the object  
2 comprises analyzing a set of properties of the object.

1 49. A method as recited in claim 46, wherein analyzing the object  
2 comprises evaluating the object's accessibility context to determine whether the  
3 component properly implements accessibility features.

1 50. A method as recited in claim 46, wherein analyzing the object  
2 comprises evaluating the object's accessibility role to determine whether the  
3 component properly implements accessibility features.  
4